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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/680,334	10/06/2000	Peter Brian Wilson	550-183	9108

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05/08/2003

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EXAMINER

DESTA, ELIAS

ART UNIT	PAPER NUMBER
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2857

DATE MAILED: 05/08/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/680,334

Applicant(s)

WILSON, PETER BRIAN

Examiner

Elias Desta

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01/02/2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 January 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other:

Detailed Action

1. The specification is objected to because of the following minor informalities:

- The following title is suggested: Test Bit-stream Generator and Method for Decoders.

Drawing

2. The drawing is objected to because of the following minor informalities:

- Fig. 1: the decision block 130 should read: any increments values not used for any variable (remove the parenthesis).
- Fig. 2: Block 210 should be described with more than one block for better clarity: suggestion: initializing the bit stream, choosing interesting image size and entry points, and then setting the defaults would be in three separate blocks, and entry 220 should come right before setting the system to a default mode.
- Fig. 2: lacks an exit condition or strategy.
- Fig. 4: The blocks' functional representation should be uniform and consistent for better clarity and understanding of the claimed invention: a suggested change would be to change the programming header with some generic functional block name and the two sub-blocks in 440 and 340 should also be numbered or labeled consistently.

Claim rejection – 35 U.S.C 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-13 are rejected under 35 U.S.C. 102(b) as anticipated by Panaro (U.S. Patent 5,731,839).

In reference to claim 1: Panaro teaches a method of generating test bit stream (digital sequence of data) decoder arranged to decode bit-streams generated in accordance with a predefined syntax (known sequence of data) (see Panaro, column 1, lines 51-59), including the steps of:

- Generating test code from the syntax, the test code being arranged when executed to generate a test bit-stream dependent on values assigned to a plurality of variables (or set of vectors), each variable having a number of interesting values (see Panaro, column 2, lines 20-45);
- Executing the test code including the step of, for each variable, assigning that variable one of its interesting values, thereby generating a test bit-stream dependent on the interesting value assigned to each variable (see Panaro, column 3, line 50 to column 4, line 37).

With regard to claim 2: as noted above in claim 1, Panaro further teaches that executing the test code (step (b)) is repeated until each variable has been assigned because to create the B frame both the first and second P-frames are utilized and then each of the B frame or interesting

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(predetermined) values are used to generate sets of bit-stream values (see Panaro, Fig. 3 and column 5, lines 33-55)

With regard to claim 3: as noted above in claim 2, Panaro further teaches that each variable has a first set of interesting values (test sequence) for use in generating supported bit-streams supported by the bit-stream decoder, and a second set of pre-determined or interesting values for use in generating unsupported bit streams that are valid having regard to the syntax but not supported by the bit stream decoder, and the test code is executed to generate a set of supported test bit streams and a set of unsupported test bit streams, such as title (see Panaro, column 1, line 60 to column 2, line 7, and column 4, lines 38-67).

With regard to claim 4: as noted above in claim 1, Panaro further teaches that the variable is defined by the syntax (see Panaro, column 1, lines 27-38).

With regard to claim 5: as noted above in claim 4, Panaro further teaches that the bit stream decoder supports at least one variable having any value from a set of non-overlapping continuous ranges because video decoders are sensitive to delays and distortion and require a non-overlapping and continuous range of signals (see Panaro, column 2, lines 9-19).

With regard to claim 6: as noted above in claim 5, Panaro further teaches that the method of generating the bit-streams which are supported by the bit-stream decoder the predetermined or interesting values of a variable are the boundary cases of each range in the set because Panaro uses block-based predictive coder (see Panaro, column 6, lines 8-19).

With regard to claim 7: as noted above in claim 5, Panaro further teaches that bit streams that are valid having regard to the syntax (the codes that may be used and the ways that may be arranged) but not supported by the bit stream decoder, the interesting values of at least one

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variable are those values adjacent to, but outside of each range in a set (see Panaro, column 4, lines 29-35), because Panaro provides a system that also provides a test syntax for all types of decoders and the test case have a wider range of possibilities including codes that are not supported by the decoder under test (see also Panaro, column 2, lines 1-7).

With regard to claim 8: as noted above in claim 1, Panaro further teaches that the system includes an internal variable (motion vectors) used to control execution of conditional operations within the test code (see Panaro, column 2, lines 20-37).

With regard to claim 9: as noted above in claim 8, Panaro further teaches that each internal variable may take any value within one or more ranges of values, and the interesting values for the internal variable are the boundary cases for each range (see Panaro, column 2, lines 21-32).

With regard to claim 10: as noted above in claim 1, Panaro further teaches that the system includes the step of generating one or more tables containing the interesting values of each variable (see Panaro, column 2, lines 20-24).

In reference to claim 11: Panaro teaches a test bit-stream generator for generating test bit-streams to test a bit-stream decoder arranged to decode bit-streams generated accordance with a predefined syntax (see Panaro, Fig. 1 and column 1, lines 5-10). The system includes:

- A processor arranged to execute test code generated from the syntax (see Panaro, Figs. 1 and 2 and column 3, lines 42-49), the test code being arranged when executed to generate a test bit-stream dependent on values assigned to a plurality of values, each variable having a number of interesting values (see Panaro, column 3, lines 50-67);

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- A value determination means, responsive to execution of the test code (see Panaro, column 4, lines 1-37), to assign to each variable one of the interesting values, where a test bit-stream is generated dependent on the interesting value assigned to each variable.

With regard to claim 12: as noted above in claim 1, Panaro further teaches that the system includes a computer program operable to configure a processing unit to perform a method of generating test bit-streams because Panaro in column 3, lines 41-49 indicates that the decoder under test can be implemented as a software decoder (see also Panaro, Fig. 1).

With regard to claim 13: as noted above in claim 12, Panaro further teaches that the carrier medium includes interface hardware between display/input devices and the main computer (see Panaro, Fig. 1, member 104, 106 and 108).

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant disclosure:
- a) Isnardi et al. (U.S. Patent 6,400,400) teaches a method and apparatus for automated testing of a video decoder.
 - b) Ordentlich et al. (U.S. Patent 6,510,247) teaches decoding of embedded bit streams produced by context-based ordering and coding of transform coefficient bit-planes
 - c) Meehan et al. (U.S. Patent 5,706,002) teaches method and apparatus for evaluating the syntax elements for DCT coefficients of a video decoder.
 - d) Settle et al. (IEEE Journal) teaches a method of digital bit-stream generator for testing MPEG video decoders.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elias Desta whose telephone number is (703)-305-3840. The examiner can normally be reached on M-Thu (8:00-6:30).

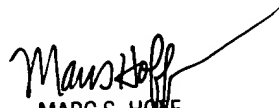
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marc S. Hoff can be reached on (703)-308-1677. The fax phone numbers for the organization where this application or proceeding is assigned are (703)-308-5841 for regular communications and (703)-308-5841 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)-308-1782.

Elias Desta
Examiner
Art Unit 2857

-ed

April 28, 2003


MARC S. HOFF
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800